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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/083,674

10/19/2001

Yan Zhou

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3848

7590

05/14/2004

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EXAMINER

PETKOVSEK, DANIEL J

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,674

Applicant(s)

ZHOU ET AL.

Examiner

Daniel J Petkovsek

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on election received March 1, 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-95 is/are pending in the application.
- 4a) Of the above claim(s) 1-36 and 47-95 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on October 19, 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/4/02, 4/28/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This office action is in response to the election received March 1, 2004. In accordance with the amendment, Group II, namely claims 37-46, have been elected.

Election/Restrictions

1. Applicant's election with traverse of the restriction requirement in the election received March 1, 2004, is acknowledged. The traversal is on the grounds that the restriction failed to make a prima facie case for distinction between Groups I and II, Groups II and V, Groups I and IV, Groups I and V, Groups I and VI, Groups II and IV, Groups II and VI, Groups III and IV, Groups III and V, Groups III and VI, Groups I and III, and Groups IV and V. *There are no arguments* stated as to the restriction of Groups II and III, Groups IV and VI, or Groups V and VI.
2. This is not found persuasive because: Regarding Groups I and II, the inventions are not disclosed as capable of use together, while Group I operates as a mode transformer, Group II operates as a waveguide with graded-index properties. Regarding Groups II and V, Groups I and IV, Groups I and V, Groups I and VI, Groups II and IV, Groups II and VI, Groups III and IV, Groups III and V, and Groups III and VI, materially different processes can be used, such as selective etching, not using a photomask, and/or the materials NOT being deposited (in another manner). Regarding Groups I and III, the Groups are disclosed as usable together in a single combination, such as an optical mode transformer. Regarding Groups IV and V, the Groups are disclosed as usable together in a single combination, such as a method of fabricating an optical waveguide.

The requirement is still deemed proper and is therefore made FINAL. Claims 37-46 are under examination, while claims 1-36 and 47-95 have been withdrawn from consideration.

Priority

3. This application claims benefit of 60/242,213, filed 10/20/2000.

Information Disclosure Statement

4. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on April 4, 2002, and April 28, 2003, have been considered and made of record (note attached copy of forms PTO-1449).

Drawings

5. The drawings are objected to because the figure numbers are not clearly drawn (see Figs. 25, 28, and 31, for example), as they are blacked out and illegible. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. Correction of the entire drawings is required.

Specification

6. The disclosure is objected to because of the following informalities: The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

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7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 42, 44, and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Song et al. U.S.P. No. 6,339,667.

Song et al. U.S.P. No. 6,339,667 teaches (Fig. 2, column 3, lines 23-47) an optical waveguide 10 comprising: a substrate 210, a lower waveguide cladding 220, a non-cylindrical core 230, an upper waveguide cladding (i.e. air or any layer above core), the refractive index in the core being constant in both x and y coordinates, which clearly, fully meets Applicant's claimed limitations.

9. Claim 37, 38 and 40 rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. U.S.P. No. 6,690,871.

Lee et al. U.S.P. No. 6,690,871 teaches (ABS, Figs. 1 and 3, column 2, lines 8-34, lines 49-63) an optical waveguide having a substrate, lower cladding, waveguide core, and upper cladding, in which the waveguide core has a graded index layer that creates a gradual refractive index grading up to the cladding-core interface in both the x and y coordinate directions. The graded index layer is used in both the x and y coordinate to smooth the optical waveguiding ability of the core, which clearly, fully meets Applicant's claimed limitations.

Claim Rejections - 35 USC § 103.

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10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 39, 43, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U.S.P. No. 6,690,871.

Lee et al. U.S.P. No. 6,690,871 teaches (ABS, Figs. 1 and 3, column 2, lines 8-34, lines 49-63) an optical waveguide having a substrate, lower cladding, waveguide core, and upper cladding, in which the waveguide core has a graded index layer that creates a gradual refractive index grading up to the cladding-core interface. The graded index layer is used in both the x and y coordinate to smooth the optical waveguiding ability of the core. Lee et al. '871 does not explicitly teach that the graded index layer is in only one direction (x,y), and is constant in the other direction (x,y). Since Lee et al. '871 teaches that the layer is used for the purpose of improving the propagation of optical signals through the core, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use graded refractive indices in either the x or y coordinate direction for the purpose of a desired waveguide propagation response. Having the core graded in either direction would improve the desired coupling performance by maintaining the optical signal in a non-cylindrical waveguide (for example, a simple optical grating is graded in either the x or y coordinate, and constant in the other coordinate).

Inventorship

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12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

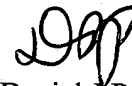
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, with respect to the state of the art of non-cylindrical optical waveguides: PTO-892 form references C-F.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J Petkovsek whose telephone number is (571) 272-2355. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel J Petkovsek
Examiner
Art Unit 2874

May 11, 2004



AKM ENAYET ULLAH
PRIMARY EXAMINER